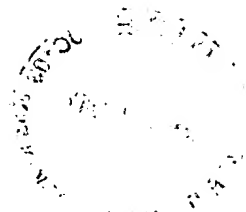


FIG. 1A-1
FIG. 1A-2

FIG. 1A

GAATTC	CCCCCA	CAGAGCC	AAGCTCT	CCATCT	AGTGGA	CAGGAA	GCTAGC	AGCA	AACC	39 (UPPER: SEQ ID NO.: 1)										
TTCCCTT	CAC	TACAA	AACTT	CATTG	CTTGG	CCAAA	AGAGAG	TTAAT	TCAATG	TAGACAT	119									
CTATG	TAGGCA	ATTAA	AAACCT	ATTGAT	GTATAA	AAACAG	TTTGCA	TTTCAT	TGGAGG	CAAC	39									
TAAAT	ACATT	CTAGG	ACTTT	TATAA	AGATC	ACTTTT	TATTAT	GCAC	AGGTG	GAAACA	179									
ATGGA	TTATCA	AGTCA	AGTCC	AATCT	ATGAC	ATCAAT	TATTAT	ATAC	ATCGG	AGCCCTGC	59									
M	D	Y	Q	V	S	S	P	I	Y	D	I	N	Y	Y	T	S	E	P	C	239
																				79
																				299
																				99

FIG. 1A-1



EDFED-EDFED

CAAAAATCAATGTGAAGCAAATCGAGCCCGCTCCTCGCTCTACTCACTGGTG 359  
Q K I N V K Q I A A R L L P P L Y S L V 119

TTTCATCTTTGGTTTGTGGCAACAATGCTGGTCACTCCTCATCCTGATAAAGG 419  
F I F G F V G N M L V I L I L I N C K R 139

CTGAAGAGCATGACTGACATCTACCTGCTCAACCTGGCCATCTCTGACCTGTTTTCCTT 479  
L K S M T D I Y L L N L A I S D L F F L 159

CTTACTGTCCCTTCTGGGCTCACTAATGCTGCCGCCAGTGGACTTGGAAATACAATG 539  
L T V P F W A H Y A A A Q W D F G N T M 179

TGTCAACTCTTGACAGGGCTCTATTTATAGGCTTCTCTCTGGAATCTTCTTCATCATC 599  
C Q L L T G L Y F I G F F S G I F F I I 199

CTCCTGACAATCGATAGGTACCTGGCTGCTGCCATGCTGTGTTGCTTTAAAGCCAGG 659  
L L T I D R Y L A V V H A V F A L K A R 219

ACGGTCACCTTTGGGGTGGTGACAAGTGTGATCACTTGGGTGGTGGCTGTGTTGCGTCT 719  
T V T F G V V T S V I T W V V A V F A S 239

CTCCAGGAATCATCTTTACCAGATCTCAAAAGAAGTCTTCATTACACCTGCAGCTCT 779  
L P G I I F T R S Q K E G L H Y T C S S 259

CATTTTCCATACA  
H F P Y

FIG. 1A-2

FIG. 1B-1
FIG. 1B-2

FIG. 1B

59 (UPPER: SEQ ID NO.: 2)  
19 (LOWER: SEQ ID NO.: 5)

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GAATTCCCCCAACAGAGCCAAGCTCTCCATCTAGTGGACAGGGAAGCTAGCAGCAACC

TTCCCTTCACTACAAAACCTTCATTGCTTGGCCAAAAGAGAGTTAATTCAATGTAGACAT

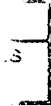
CTATGTAGGCAATTAAAAACCTATTGATGTATAAAACAGTTTGCATTCTGAGGGCAAC

TAAATACATTCTAGGACTTTATAAAAGATCACTTTTATTATGCACAGGTGGAACAAG

ATGGATTATCAAGTCAAGTCCAATCTATGACATCAATTATTATACATCGGAGCCCTGC

M D Y Q V S S P I Y D I N Y Y T S E P C

FIG. 1B-1



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2015-10-20 10:00:00

CAAAAATCAATGTGAAGCAAAATCGCAGCCCGCCTCCTGCTCCGCTCTACTCACTGGTG 359  
Q K I N V K Q I A A R L L P P L Y S L V 119  
TTCACTCTTGGTTTGTGGGCAACATGCTGGTCACTCCTCATCCTGATAAACTGCAAAAGG 419  
F I F G F V G N M L V I L I L I N C K R 139  
CTGAAGAGCATGACTGACATCTACCTGCTCAACCTGGCCATCTCTGACCTGTTTTCCTT 479  
L K S M T D I Y L L N L A I S D L F L 159  
CTTACTGTCCCTTCTGGGCTCACTATGCTGCCGCCCGCAGTGGGACTTTGGAAATACAATG 539  
L T V P F W A H Y A A A Q W D F G N T M 179  
TGTCAACTCTTGACAGGGCTCTATTTATAGGCTTCTCTGGAATCTTCTTCATCATC 599  
C Q L L T G L Y F I G F F S G I F I I 199  
CTCCTGACAATCGATAGTACCTGGCTGCTGCTCCATGCTGTGTTGCTTTAAAGCCAGG 659  
L L T I D R Y L A V V H A V F A L K A R 219  
ACGGTCACCTTTGGGGTGGTGACAAGTGTGATCACTTGGGTGGCTGTGTTGCGTCT 719  
T V T F G V V T S V I T W V V A V F A S 239  
CTCCAGGAATCATCTTTACCAGATCTCAAAAGAAGTCTTCATTACACCTGCAGCTCT 779  
L P G I I F T R S Q K E G L H Y T C S S 259  
CATTTCCATACAGTCAGTATCAATTCTGGAAGAATTTCCAGACATTAAGATAGTCATC 839  
H F P Y S Q Y Q F F W K N F Q T L K I V I 279

FIG. 1B-2

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201610-ED28E660

TTGGGGCTGCTCCTGCCGCTGCTTGTCATGTCATCTGCTACTCGGGAATCCTAAAACT 899  
 L G L V L P L L V M V I C Y S G I L K T 299  
 CTGCTTCGGTGTGAAATGAGAAGAGGACAGGGCTGTGAGGCTTATCTTCACCATC 959  
 L L R C R N E K K R H R A V R L I F T I 319  
 ATGATTGTTTATTTCTCTTCTGGGCTCCCTACACATTGTCTCTTCTCTGAAACACCTTC 1019  
 M I V Y F L F W A P Y N I V L L L N T F 339  
 CAGGAATTCTTTGGCCTGAATAATTGCAGTAGCTCTAACAGGTTGGACCAAGCTATGCAG 1079  
 Q E F F G L N N C S S S N R L D Q A M Q 359  
 GTGACAGAGACTCTTGGGATGACGCACCTGCTGCATCAACCCCATCATCTATGCTTTGTC 1139  
 V T E T L G M T H C C I N P I I Y A F V 379  
 GGGAGAAGTTCAGAAACTACCTCTTAGTCTTCTTCCAAAGCACATTGCCAAACGCTTC 1199  
 G E K F R N Y L L V F F Q K H I A K R F 399  
 TGCAAATGCTGTTCTATTTCCAGCAAGAGGCTCCGAGCGAGCAAGCTCAGTTTACACC 1259  
 C K C C S I F Q Q E A P E R A S S V Y T 419  
 CGATCCACTGGGGAGCAGGAAATATCTGTGGGCTTGTGACACGGACTCAAGTGGGCTGGT 1319  
 R S T G E Q E I S V G L \* 439  
 GACCCAGTCAGAGTTGTGCACATGGCTTAGTTTTTCATACACAGCCTGGGCTGGGGTNGG 1379  
 459  
 TTGGNNGAGGTCTTTTTTAAAGGAAGTTACTGTATTAGAGGGTCTAAGATTTCATCCATT 1439  
 479  
 TATTGGCATCTGTTTAAAGTAGATTAGATCCGAATTC

TATTGGCATCTGTTTAAAGTAGATTAGATCCGAATTC

FIG. 1B-3

FIG. 1D-1
FIG. 1D-2

FIG. 1D

GAATTCCCCCAACAGAGCCAAGCTCTCCATCTAGTGGACAGGGAAGCTAGCAGCAAACC	59 (UPPER: SEQ ID NO. 3)
	19 (LOWER: SEQ ID NO. 6)
TTCCCTTCACTACAAAACCTTCATTGCTTGGCCAAAAGAGAGTTAATTCAATGTAGACAT	119
	39
CTATGTAGGCAATTAAAAACCTATTGATGTATAAAACAGTTTGCAATTCATGGAGGGCAAC	179
	59
TAAATACATTCTAGGACTTTATAAAAGATCACTTTTATTATGCACAGGGTGAACAAG	239
	79
ATGGATTATCAAGTGTCAAGTCCAATCTATGACATCAATTATTATACATCGGAGCCCTGC	299
M D Y Q V S S P I Y D I N Y Y T S E P C	99

FIG. 1D-1



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FIG. 1D-2

204E40-204BEB00

CAAAAATCAATGTGAAGCAAAATCGCAGCCCGCTCCTGCCTCCGCTCTACTCACTGGTG 359  
Q K I N V K Q I A A R L L P P L Y S L V 119  
TTCATCTTTGGTTTGTGGCAACATGCTGGTCATCCTCATCCTGATAAACTGCAAAAGG 419  
F I F G F V G N M L V I L I L I N C K R 139  
CTGAAGAGCATGACTGACATCTACCTGCTCAACCTGGCCATCTCTGACCTGTTTTCCTT 479  
L K S M T D I Y L L N L A I S D L F F L 159  
CTTACTGTCCCTTCTGGGCTCACTATGCTGCCGCCAGTGGGACTTTGGAAATACAATG 539  
L T V P F W A H Y A A A Q W D F G N T M 179  
TGTCAACTCTTGACAGGGCTCTATTTATAGGCTTCTTCTGGAATCTTCTTCATCATC 599  
C Q L L T G L Y F I G F F S G I F I I 199  
CTCCTGACAAATCGATAGGTACCTGGCTGCTGCCATGCTGTGTTTGTAAAGCCAGG 659  
L L T I D R Y L A V V H A V F A L K A R 219  
ACGGTCACCTTTGGGGTGGTGACAAGTGTGATCACTTGGGTGGTGGCTGTGTTGCGTCT 719  
T V T F G V V T S V I T W V V A V F A S 239  
CTCCAGGAATCATCTTTACAGATCTCAAAAGAAGTCTTCATTACACCTGCAGCTCT 779  
L P G I I F T R S Q K E G L H Y T C S S 259  
CATTTCCATACATTAAGATAGTCATCTTGGGGCTGGTCCCTGCCGCTGTGTCATGGT 839  
H F P Y I K D S H L G A G P A A A C H G 279



FIG. 1D-3

204440-40433333

CATCTGCTACTCGGGAATCCTAAAACTCTGCTTCGGTGTGCGAAATGAGAAAGAGGCA 899  
H L L L G N P K N S A S V S K \* 299  
CAGGGCTGTGAGGCTTATCTTCACCATCATGATTGTTTATTCTCTCTCTGCGCTCCCTA 959  
319  
CAACATTGTCCTTCTCTGAAACACCTTCCAGGAATCTTTGGCCTGAATAATTGCAGTAG 1019  
339  
CTCTAACAGGTGGACCAAGCTATGCAGGTGACAGAGACTCTTGGGATGACGCACCTGCTG 1079  
359  
CATCAACCCCATCATCTATGCCTTTGTGCGGGAGAAAGTTCAGAAACTACCTCTTAGTCTT 1139  
379  
CTTCCAAAAGCACATTGCCAAACGCTTCTGCAAAATGCTGTCTATTTTCCAGCAAGAGGC 1199  
399  
TCCCGAGCGAGCAAGCTCAGTTTACACCCGATCCACTGGGGAGCAGGAAATATCTGTGGG 1259  
419  
CTTGTGACACGGACTCAAGTGGGCTGGTGACCCAGTCAGAGTTGTGCACATGGCTTAGTT 1319  
439  
TTCATACACAGCCTGGGCTGGGGTNGGTTGGNNGAGGTCTTTTTTAAAGGAAGTTACT 1379  
459  
GTTATAGAGGTCTAAGATTATCCATTATTATTTGGCATCTGTTTAAAGTAGATTAGATCC 1439  
479

GAATTC



FIG. 2A
FIG. 2B

FIG. 2

CCR5 1 MDYQVSSPIYDINVTSEPCQKINVKQIAARLLPPLYSLVFIFGVGNMVLILINCKRLKSMTDIYLLNLAISDILFLIT 83  
hcc-R2b 6 MLSTSRSRFIRNTNESGEEVTFDDYDYGAPCHKFDVKQIGAQLLPPLYSLVFIFGVGNMVLILINCKRLKCLTDIYLLNLAISDILFLIT 95  
hcc-R3 MTTSLDTVETFGTTSYDDVGLLCEKADTRALMAQFVPPLYSLVFTVGLIGNVVMMLIKYPRIRIMTNIIYLLNLAISDILFLVT 87  
hcc-R1 METPNTTEDIYDTTTFEFDYGDATPCQKVNERAFGAQLLPPLYSLVFVIGLVGNILVVLVIVQYKRLKNMTSIYLLNLAISDILFLFT 87  
hcc-R4 MNPTDIADTTLDESIYSNVLYESIPKPTKEGKAFGEFLPPLYSLVFVFGLLGNSVVLVLFKYKRIRSMTDVYLLNLAISDILFVFS 92

II

I

III

IV

CCR5 VPFWAHYA.AQWDEGNMCCOLLTGLYFIFGFFSGIFFIILLTIDRYLAIVHAVFALKARTVTFGVVTSVITWVAVFASLPGLIIFTRSQKEGLH 177  
hcc-R2b LPLWAHSA.ANEMVFGNAMCKLFTGLYHIGYFGGIFFIILLTIDRYLAIVHAVFALKARTVTFGVVTSVITWVAVFASLPGLIIFTRSQKEGLH 189  
hcc-R3 LPFWHYVRGHNVFCHGMCNLLSCFVHTGLYSEIFFIILLTIDRYLAIVHAVFAIRARTVTFGVITSVITWGLAVLALPEFFIFETEELFEE 182  
hcc-R1 LPFWIDYKLKDDNVFGDAMCKILSGFYVTGLYSEIFFIILLTIDRYLAIVHAVFAIRARTVTFGVITSVITWGLAVLALPEFFIFETEELFEE 182  
hcc-R4 LPFWGYYA.AQWVFGGLGCKMISWMLVGFYSGIFFVMLMSIDRYLAIVHAVFSRARTLVYGVITSLATWSVAVFASLPGLIFSTCYTEIRNH 186

FIG. 2A

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# VI

# V

CCR5 YTCSSHPYSQYQF WKNFQTLKI VILGLVPLLVVICYSGLKTLRCNEKKRRAVRLLFTIMIVYFLFWAPYNIVLLNTFQEFFGLNNC 272  
 hcc-R2b YTCSSHPYSQYQF WKNFQTLKI VILGLVPLLVVICYSGLKTLRCNEKKRRAVRLLFTIMIVYFLFWAPYNIVLLNTFQEFFGLNNC 280  
 hcc-R3 TLCSALYPEDTVYSRHHHTLRMTIFQLVPLLVMAICYTGILKTLRCPSKKK.YKARLLIFVIMAVFFIFFWTPYNVAILLSSYSILFGNDC 276  
 hcc-R1 HTCSLHFPHESLREWKLFQALKLNLFGLVPLLVMAICYTGILKTLRCPSKKK.SKAVRLIFVIMAVFFIFFWTPYNVAILLSSYSILFGNDC 276  
 hcc-R4 TYCKTKYSLNST.TWKVLSSLEFINILGLVPLGMLFCYSMTIRTLQHCCKNEKK.NKAVKMLFAVVVFLGFWTPYNIVLEFETLVELEVLDQC 279

# VII

CCR5 SSSNRILDQAMQVTEITLGMTHCCINPIIYAFVGEKFRNYLLVFFQKHIAGR.FCKCCSIFQOEAPERASSVYTRSTGEQETISVGL 352  
 hcc-R2b ESTSQLDQATQVTEITLGMTHCCINPIIYAFVGEKFRNYLLVFFQKHIAGR.FCKCCSIFQOEAPERASSVYTRSTGEQETISVGL 360  
 hcc-R3 ERSKHLDLVMIVTEVIAYSHCCMNPVIYAFVGEKFRNYLLVFFQKHIAGR.LGRYIPFLPSEKLERETSSV.SPSTAEPELISIVF 355  
 hcc-R1 EQSRHLDLAVQVTEVIAYTHCCMNPVIYAFVGEKFRNYLLVFFQKHIAGR.LVWLPFLSVDRILERVSS.T.SPSTGEHELSACF 355  
 hcc-R4 TFERVLDYAIQATETIAFVHCCINPIIYAFVGEKFRNYLLVFFQKHIAGR.LVWLPFLSVDRILERVSS.T.SPSTGEHELSACF 360

FIG. 2B

APPROVED	O. FIG.	
BY	CLASS	DATE
DRAFTSMAN		

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CCR5

CCR2

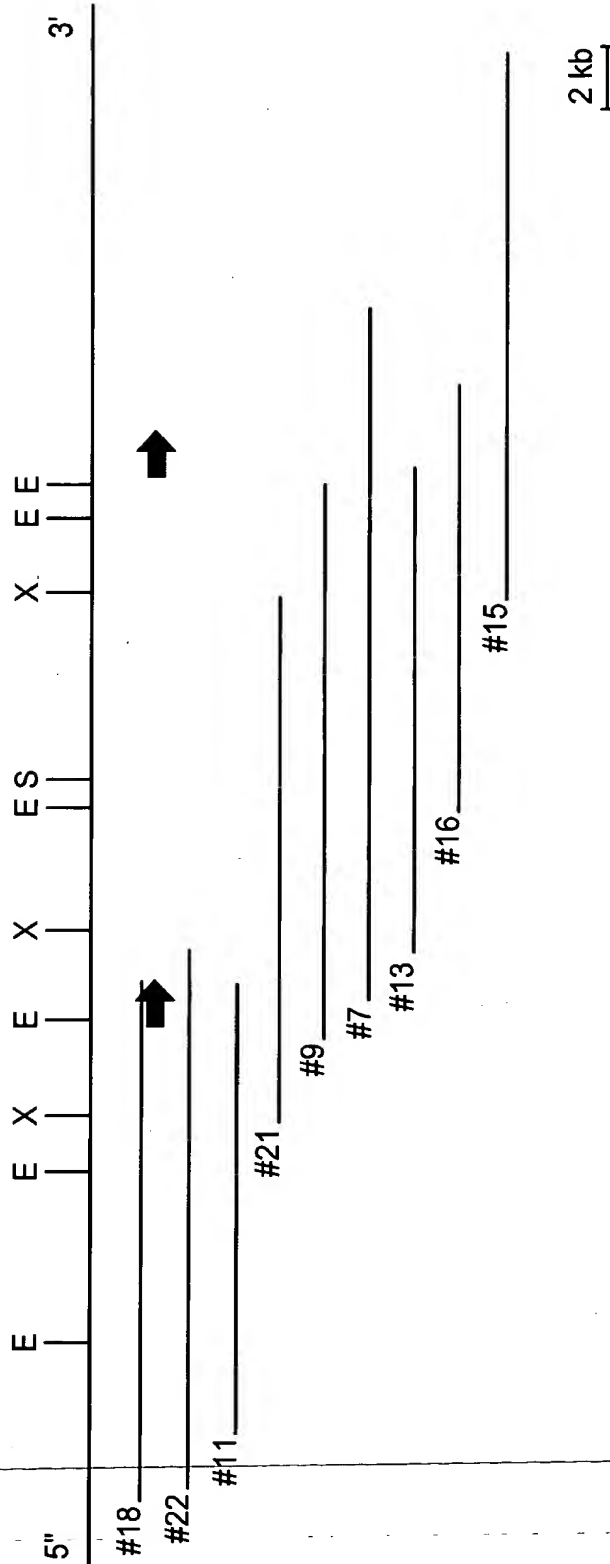


FIG. 3

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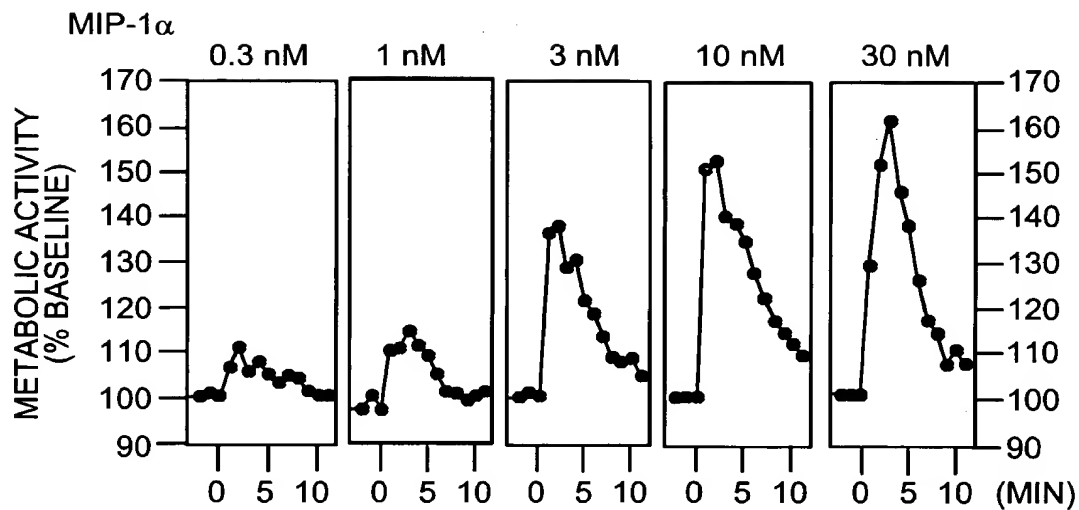


FIG. 4A

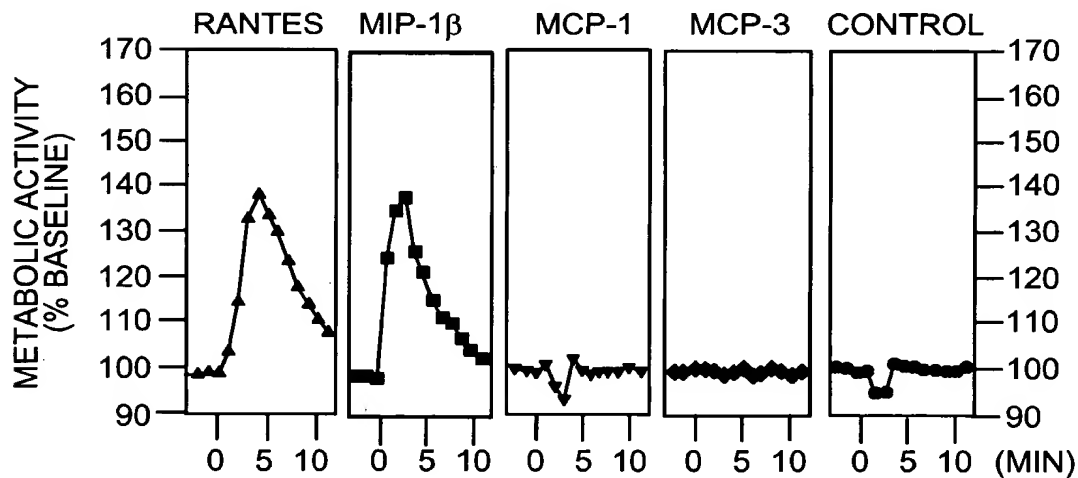


FIG. 4B

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3710  
DEC 1 1991  
FBI LABORATORY

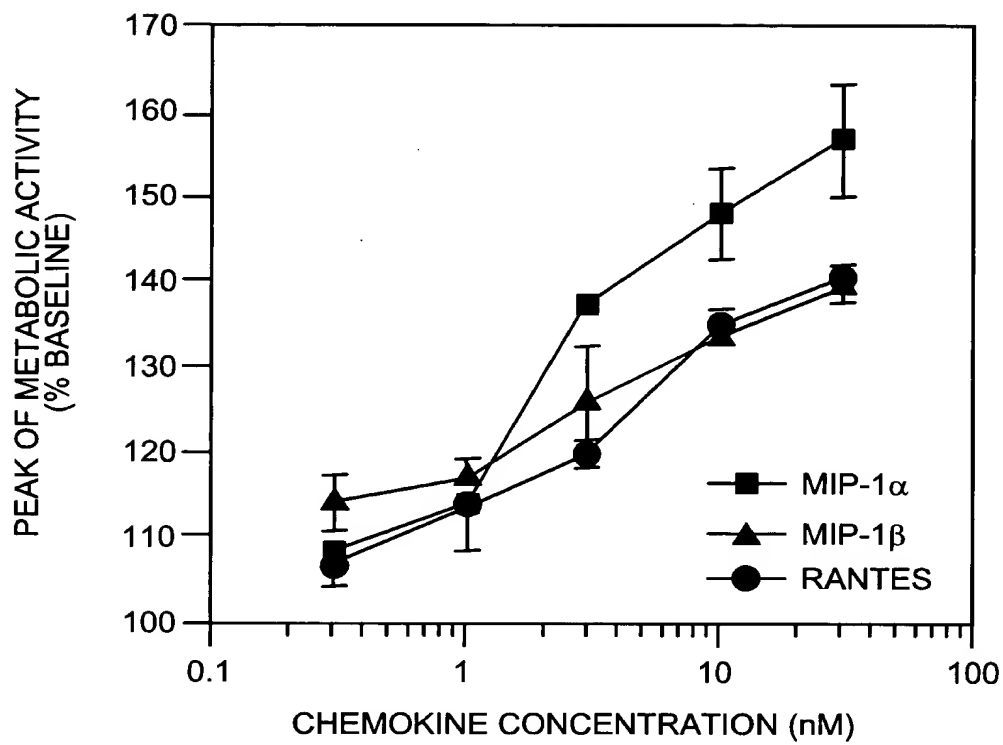


FIG. 4C

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2016-10-20 14:20:00

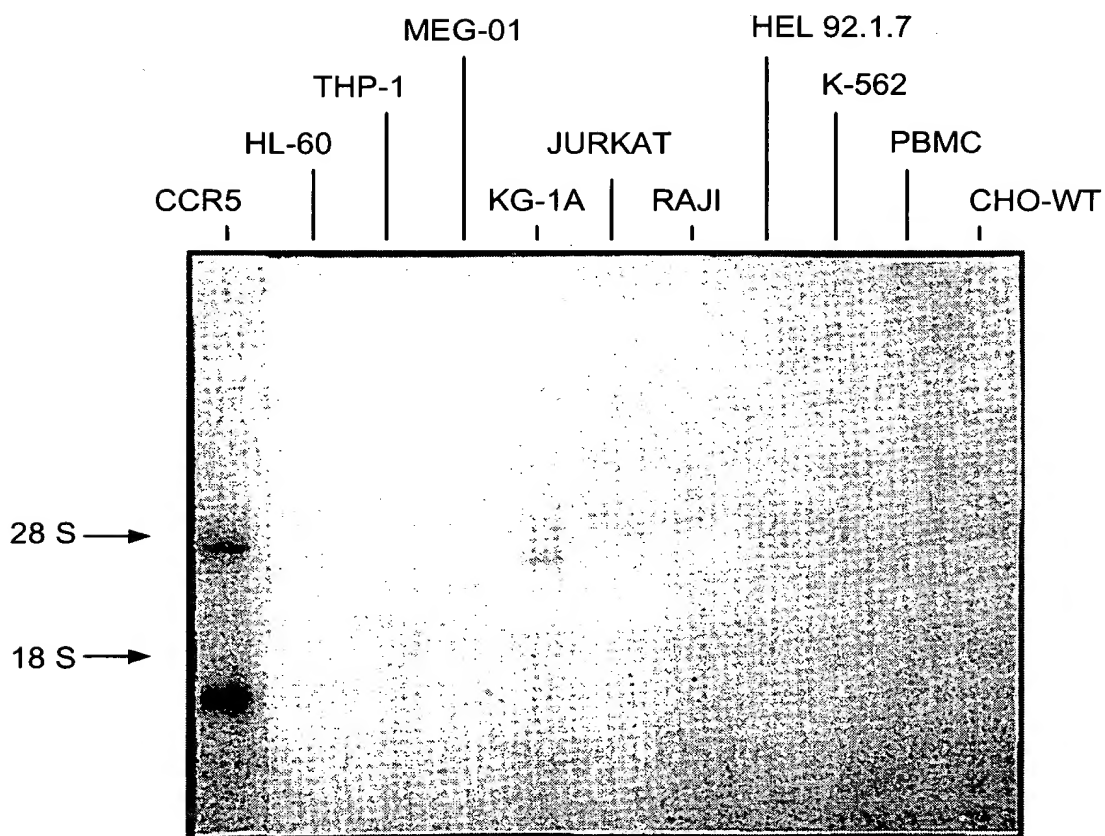


FIG. 5



**deletion**

CCR5 L L V M V I C Y S G I L K T L L R C R N E K K R  
CTGCTTGTCATGGTCATCTGCTACTCGGGAATCCTAAAACTCTGCTTCGGTGTCTGAAATGAGAAGAGAGG  
Δccr5 A A C H G H L L L G N P K N S A S V S K \*

**FIG. 6B**



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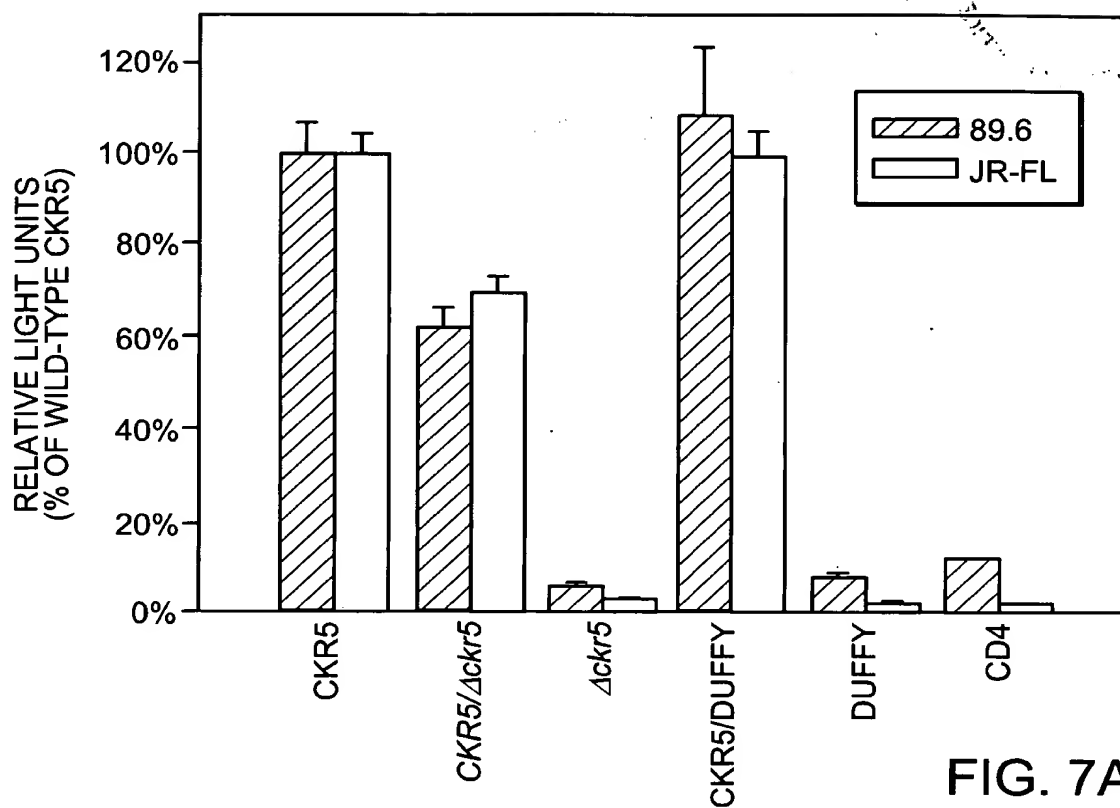


FIG. 7A

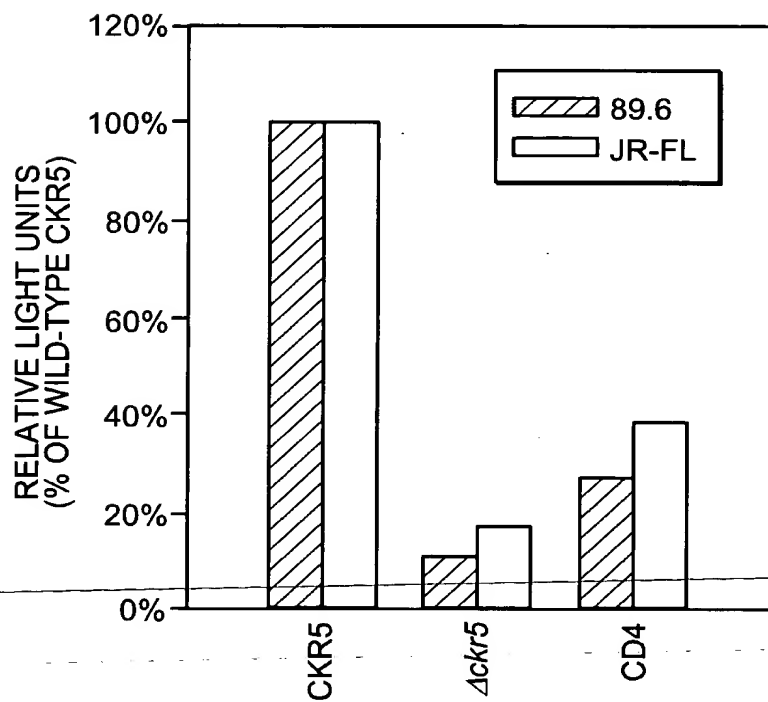


FIG. 7B

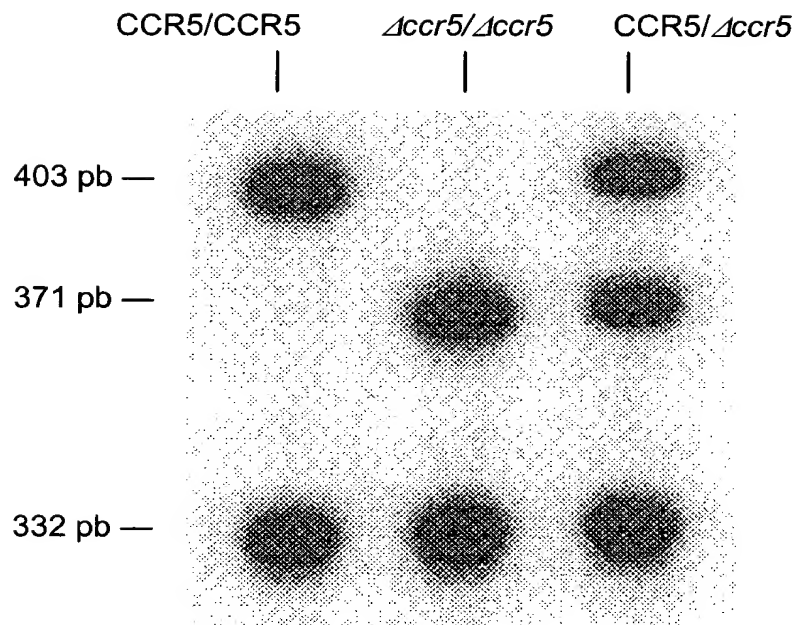
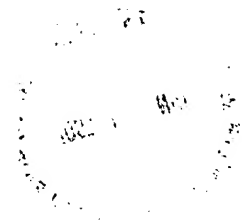
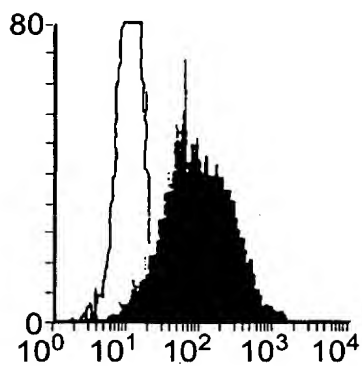
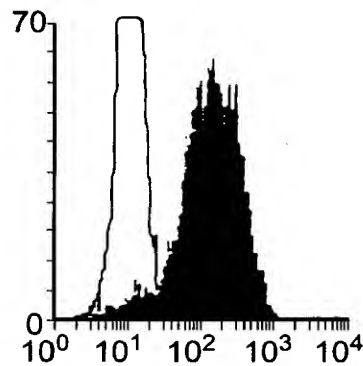


FIG. 8



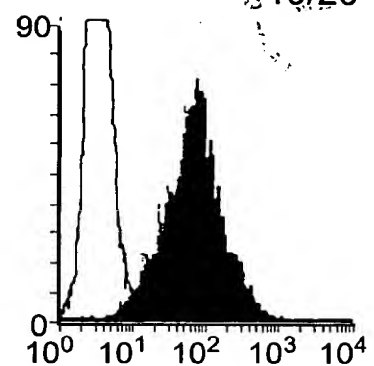
**AO**

FIG. 9A



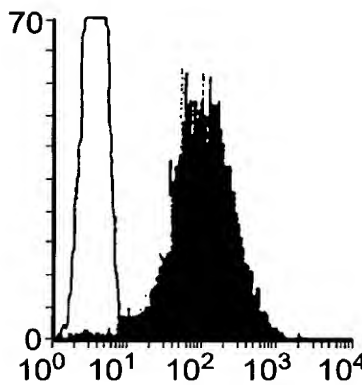
A1

FIG. 9B



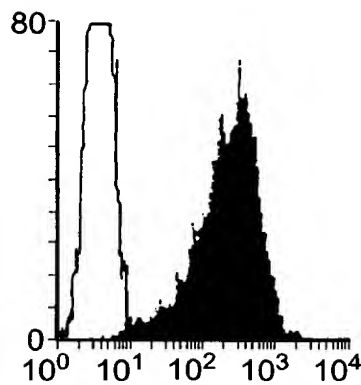
A2

**FIG. 9C**



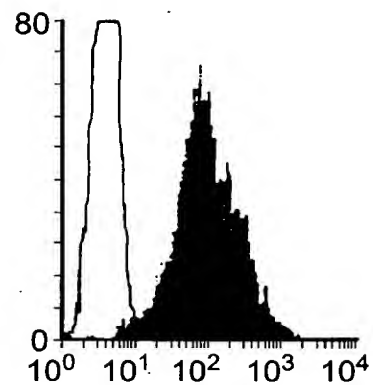
A5

FIG. 9D



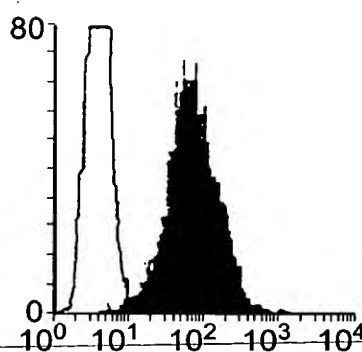
A4

FIG. 9E



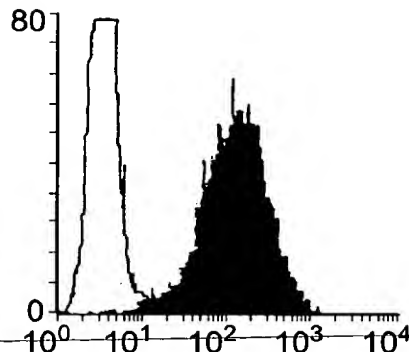
B0

FIG. 9F



B1

FIG. 9G



B3

FIG. 9H

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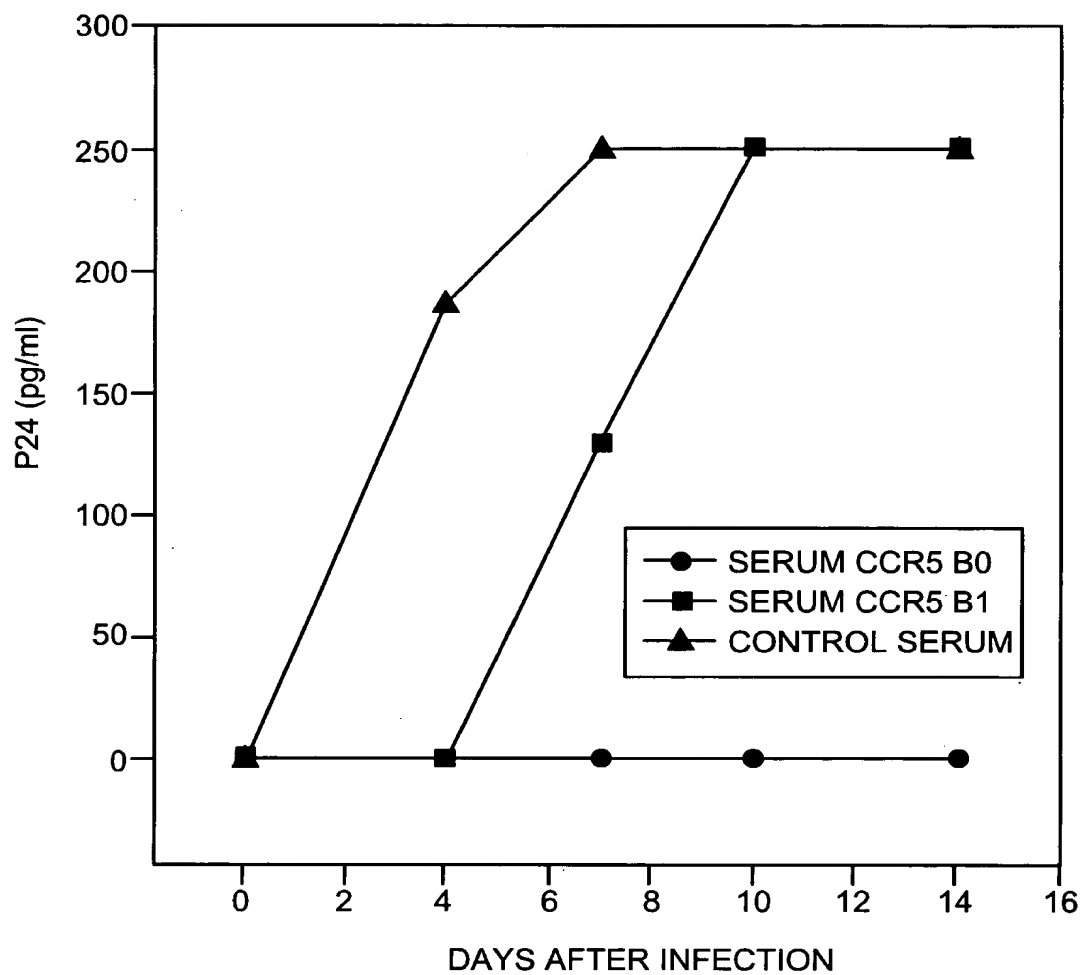


FIG. 10